

# RESIDENTIAL EV CHARGING REQUIREMENTS

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## Purpose

The following handout contains information regarding the EV Charging Space requirements for residential developments, according to [Ordinance 1049](#). The requirements listed below apply to building permit applications submitted after November 23, 2018.

## Definition of Terms

The following are Code definitions and expanded explanations for the terms used in the Residential EV Charging Requirements. Please refer to the definitions in Chapter 2 of the California Green Building Standards for additional information.

Term	Building Code Definition	Explanation
Electric Vehicle (EV) Charger	Off-board charging equipment used to charge an electric vehicle.	The EV Charger is the equipment that connects to the EV to provide electricity. In some cases, multiple charging heads may stem from a unit.
Electric Vehicle Supply Equipment (EVSE)	The conductors, including the ungrounded, grounded, and equipment grounding conductors and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.	The EVSE includes everything required to provide energy to the EV. Working backward from the vehicle, this means the charger is connected to an appropriate outlet or directly wired within a "listed raceway" (i.e., a conduit) leading to a dedicated breaker within the electrical panel that has sufficient electrical capacity to supply the EV with energy when the charger head is connected to the vehicle. For the purposes of calculating the number of spaces with EVSE installed, staff will consider the total number of vehicles in designated spaces that can be served at the same time.
Electric Vehicle Charging Space (EV Space)	A space intended for future installation of EV charging equipment and charging of electric vehicles.	An EV space is a parking space identified for the future installation of EVSE. The requirements for EV spaces vary between residential and nonresidential developments. At a minimum, EV spaces are required to have a "listed raceway" (i.e., a conduit) leading to the parking space, and designated room in the electrical panel for the chargers to be installed in the future. Room for the charger shall also be preserved outside of the required space dimensions <sup>1</sup> . In some cases, wiring will be required within the conduit. Please review the requirements in the next section for details regarding when wiring will be required.
Electric Vehicle Charging Station (EVCS)	One or more electric vehicle charging spaces served by electric vehicle charger(s) or other charging equipment allowing charging of electric vehicles. Electric vehicle charging stations are not considered parking spaces.	An EV space with the EVSE installed is considered an Electric Vehicle Charging Station (EVCS). Though regulated differently from a Building Code perspective, the City of Menlo Park will count EVCS towards the total number of parking spaces on a site.
Raceway	An enclosed conduit that forms a physical pathway for electrical wiring.	Conduit sufficiently large to fit wiring for the future installation of EVSE. Per the requirements that follow, please note that new construction projects are required to install both a raceway and wiring, while addition/alteration projects need only provide the raceway.

<sup>1</sup>Chargers mounted 48 inches above the slab may encroach into the required clear space dimensions.

**Residential EV Charging Requirements**

Requirements for residential projects vary depending on the number of units and whether the proposed project is new construction. The table below reflects the thresholds of applicability as well as the requirements for compliance. In all cases, calculations for spaces shall be rounded up to the nearest whole number. Please review the California Green Building Standards Code amendments in [Chapter 12.18](#) of the Municipal Code for additional information. Specifically Sections [4.106.4](#), [4.106.4.1](#), and [4.106.4.2](#) of Chapter 4 have been amended. Additional clarifications on zoning implementation can be found in the off-street parking chapter of the Zoning Ordinance, item (5) of [Section 16.72.020](#), located here: More information regarding what will need to be included with the building permit application submittal can be found in the Building Division [residential building permit requirement handout](#).

	New Construction <sup>1</sup>		Additions and Alterations <sup>1</sup>	
	Single-Family Residences & Duplexes	More than Two Units	Single-Family Residences & Duplexes	More than Two Units
<b>EV Spaces/EV Ready<sup>2</sup></b>	1 per unit	1 per unit	Voluntary	
<b>Wiring Required?</b>	No	Yes		
<b>EVSE Installed</b>	Voluntary	15% of the required number of EV spaces <sup>3,4</sup>		

- <sup>1</sup>The EV space requirement is based on the required parking associated with the building where the work is being performed, inclusive of landscape reserve parking.
- <sup>2</sup>EV Ready means for each dwelling unit, there needs to be space in the panel and a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter)
- <sup>3</sup>For each EV space, install a “listed raceway and wiring capable of accommodating a 208/240-volt dedicated branch circuit.” The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter)
- <sup>4</sup>For multi-family residential projects, property owners should consider how the electric load will be distributed between common area electric panels and individual sub-panels for the units.

**Electrical Load Calculations**

EV spaces are required to have a "listed raceway" (a conduit) leading to the parking space, and designated room in the electrical panel for the chargers to be installed in the future. In all cases electrical load calculations will need to be provided illustrating there is sufficient capacity for the future installation of all the chargers. For new multi-family residential developments, property owners should begin to consider whether they intend to tie the future chargers to subpanels for the individual unit early on, as it may affect the design of conduit and placement of the spaces.

**Residential EV Space Dimensions:**

EV spaces in residential developments are required to be a minimum of nine feet by 18 feet. EV chargers are required to be installed outside of the minimum EV space. Please review the [parking stall and driveway design guidelines](#) for details regarding high-density residential non-EV parking space dimensions. Garage spaces for lower density residential garage spaces must be 10 feet by 20 feet.

**Residential Accessibility Requirements for EV Spaces**

For multi-family residential developments, one in every 25 EV spaces will be required to provide an eight-foot-wide loading aisle. This aisle may be reduced to five feet, where a 12-foot wide space is provided. The accessible spaces will need to comply with Chapter 11A of the Building Code, pertaining to an accessible path of travel. Accessible spaces for non-EVs are required to be replaced if proposed to be converted into an accessible EV space. Please review the accessibility requirements in detail to confirm the appropriate type and number of accessible stalls are provided. Please contact the Building Division with questions regarding accessibility requirements.